ARCHAEOLEG CAMBRIA ARCHAEOLOGY

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CEFN SIDAN WRECK RECORDING PROJECT

PROJECT No. ~~32088~~ 56958

1997

Report prepared
by
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for

Cadw: Welsh Historic Monuments

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> *"Carmarthen Bay, then unprotected by lights was the scene of terrible suffering for the treacherous Cefn Sidan extended nearly seven miles out to sea, and at low water appeared like an immense desert of barren sand, mile upon mile of which were to be seen with the melancholy momentoes of wrecked ships, the bleached timbers, just appearing above the sand, marking the spot where perished the unfortunate mariners..."*
>
> (taken from *Queen of the Seas* by Captain W F Armstrong)

This report outlines the results of a project to record some of those "melancholy momentoes". The bleached timbers in the sand are practically all that remain of the long and extremely rich maritime history of the Carmarthen Bay area. Even though the first evidence for shipping in the bay comes from medieval documents it is likely that the first Roman incursion into the area was by sea, and both Carmarthen and Kidwelly had thriving medieval shipping industries. Pembrey, Burry Port and Llanelli developed into important shipping centres for the coal and metal processing industries of the 18th and 19th centuries. Carmarthen Bay shipping declined for two main reasons. First, the arrival of the railways in the mid-19th century provided a cheaper and more efficient alternative to carrying freight by sea and second, sedimentation in the Towy, Gwendraeth and Burry rivers effectively closed the area to commercial shipping. The harbour at Pembrey and Kidwelly Quay are now disused (Pembrey Harbour is now saltmarsh) and Burry Port harbour is used for pleasure craft only. For the most part, later shipping in the bay consisted of small coastal traders servicing the coal and metal industries of eastern Carmarthen Bay, but, in bad weather ocean-going vessels were often driven into the bay by the prevailing southwest winds. Once in the bay, and unable to beat back against the wind they grounded on the shallow sands, where they were quickly broken up. The hulks visible on Cefn Sidan Beach today reflect that mix of local and exotic traffic.

INTRODUCTION

The mainland coastline of the recently dissolved county of Dyfed stretches from the Dyfi Estuary in the north to the Loughor Estuary in the south, a distance of some 605km (Fig 1). Along its length are some of the major (past and present) Welsh sea ports. Shipping and its associated industries have shaped, and continue to shape, the character of the Dyfed coastal communities. Although that influence is now largely confined to the major sea ports of Milford Haven and Fishguard there is ample evidence of past maritime activity visible along the whole coastline. Probably the most obvious evidence of that activity is the numerous shipwrecks within the intertidal zone.

This project was designed to record three hulks in the intertidal zone of Cefn Sidan Sands. It was part of a wide-ranging programme of follow-up work to a Cadw grant-aided survey of a large area of wetlands between Kidwelly and Pembrey, Carmarthenshire[1]. The survey recognised that a number of hulks in the intertidal zone on Cefn Sidan sands were suffering serious erosion and that continued sand movement was exposing new sections making the problems of degradation even more acute. Further pressure on the wreck sites is an increase in the number of visitors to the beach; the wrecks lie within Wales' premier tourist attraction, Pembrey Country Park, which attracts over 500,000 people anually. Consequently, one of the recommendations arising from the wetlands survey was that the wrecks in the intertidal zone of Cefn Sidan Sands should be recorded and the immediacy of the pressures assessed. That recommendation was accepted and the Trust applied for, and received, grant-aid from Cadw: Welsh Historic Monuments to undertake the recording during summer 1996.

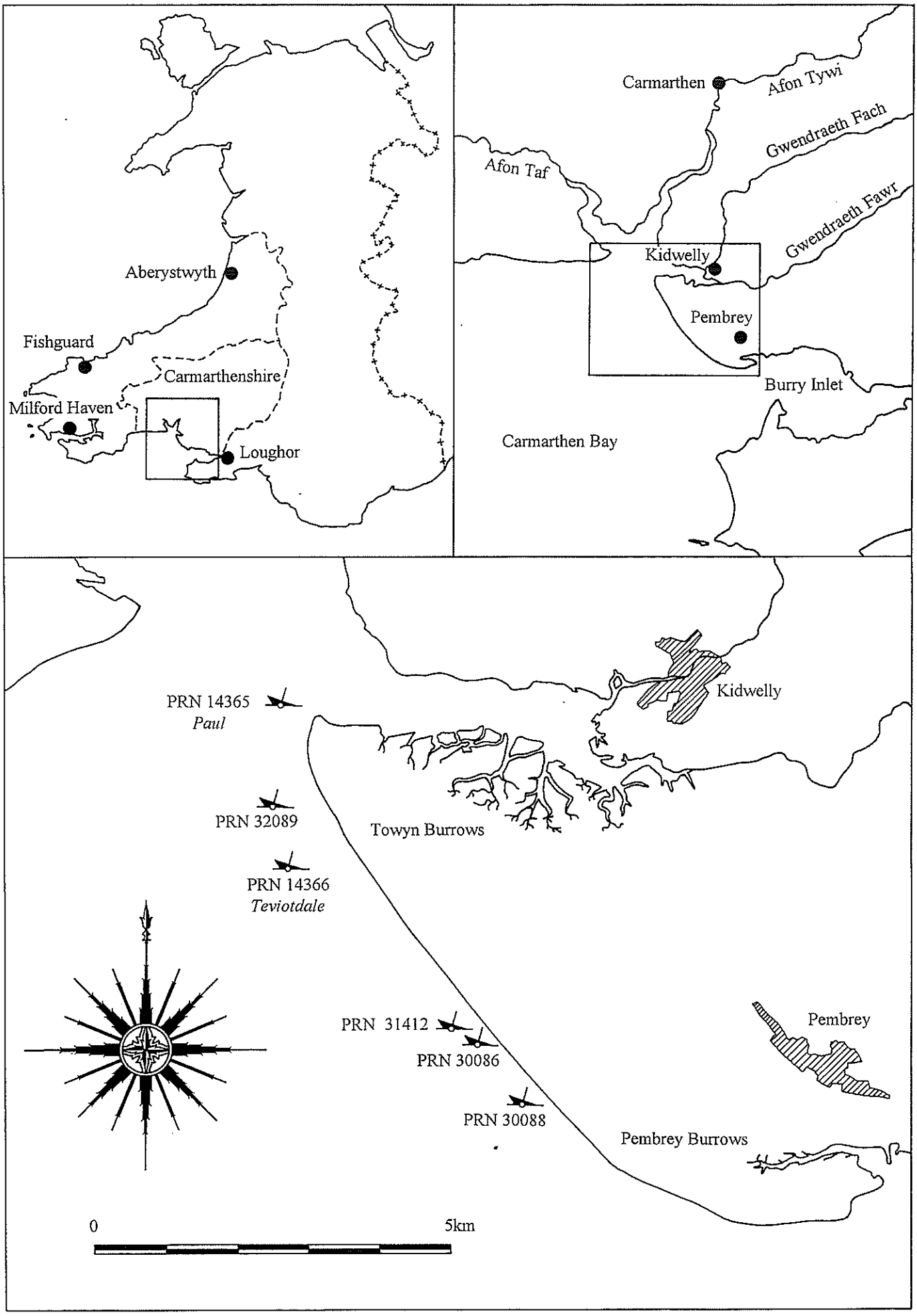


Figure 1. Location of Wrecks on Cefn Sidan Sands

THE SURVEY AREA

The survey area was Cefn Sidan Sands (Fig 1) situated at the eastern end of Carmarthen Bay. Cefn Sidan Sands is 11.2km long and backed by massive sand dune systems, Pembrey Burrows and Towyn Burrows. Carmarthen Bay is a southwest facing bay with its shifting sandbars and shallow draft is notorious with hundreds of known vessels wrecked in the bay since records began. The most recent one being a yacht smuggling drugs that was wrecked on 20 October 1996.

SURVEY RESULTS

METHODS

pre-survey

The survey recorded three wreck sites in detail. Prior to survey each wreck was recorded using *pro forma* recording sheets supplied by the Royal Commission on the Ancient and Historic Monuments for Wales (RCAHMW). Each wreck was identified by its Primary Record Number (PRN) as assigned by the regional Sites and Monuments Record (SMR), and its National Grid Reference (NGR) checked, or established, using a Carmin 45 Geographical Positioning System (GPS).

STRUCTURAL SURVEY

The structural survey of each wreck consisted of the individual elements being recorded onto DAT wood record forms and scale-drawings at a scale no less than 1:20. Numbering of the structural elements followed accepted practice with each piece of wood numbered using a continuous numbering sequence (e.g. W1; W10; W100) and assigned a function code. This meant that each element received its own unique identifying number and was accurately located within its wreck site.

Function codes

The function code describes the function and position of all structural elements within the vessel. Frames are numbered from bow to stern (e.g. FR S 1; FR = frame, S = starboard, 1 = first visible or surviving frame), and where paired are identified 'a' and 'b' (e.g. FR P 19a - 'a' being the forward frame of the pair). Planks are numbered from bottom to top, that is from the keelson (interior) and keel (exterior) outwards. (e.g. P1; P = port, 1 = lowest - centre-most - plank). Fixings and fittings are located by reference to frames and planks. Structural elements and objects not identifiable were assigned an object code and numbered from bow to stern (e.g. O1; O = object, 1 = furthest forward). Objects are located in the same way as the fixings and fittings.

Drawn records

A drawn record of the wrecks was made using a combination of EDM survey and conventional methods. The information from the EDM survey was originally to have been collected in a datalogger and downloaded to computer, edited and plotted at the office. The problem with this method in the intertidal zone is the lack of control over error checking. The movement of sediment and tides can quickly cover or remove areas of the site, often making it impossible to

check errors in the plotted data against the site. Therefore, during this project information from the EDM was manually plotted on-site enabling continual checking so that any errors could be corrected immediately. This method is very accurate but slow (an average of 8m per person per day was drawn), and was only used on the largest of the wrecks (PRN 30088). The smaller wrecks (PRNs 31412 and 30086) were drawn using the conventional techniques of offsets, triangulation and planning frame. The Nautical Archaeology Society held a number of training days on the largest of the vessels and produced a plot via the WEB for Windows programme.

THE WRECKS

Old Dan

PRN 31412

NGR: SN 3760 0185

Wreck dimensions: Length 18.5m; width 4m; height (max) 1m.

Surviving elements: ***Starboard side***: 21 frames (10 in pairs). One plank.
Port side: One frame.

Other elements: Two uprights of the stem post arrangement.

Fixings: Only iron fixings were visible.

Discussion

The remains of the *Old Dan* were aligned northeast-southwest - bow-on to the beach. The stem post and some of the starboard frames and planking were visible, but the stern and the port side were either sand covered or missing. The angle of the starboard frames suggests that the vessel was sitting square on the bottom. Taking a point between FR S 10 and FR S 11 as the assumed midships the vessel was *c.*8m (26 feet 2 1/2 inches) across the beam. Using this same assumed midships point the overall length of the vessel was approximately 30m (*c.*100 feet).

The frames were oak (*Quercus*) and set in pairs with between 420mm and 450mm between the centres of the pairs. There was little variation in scantlings; they were on average 110mm x 100mm. Only one plank was visible. All fixings were iron and most were driven through the frames, most continued into the inner planking. Frame pairs were fixed together with iron fixings.

The *Old Dan* was one of hundreds of small vessels (mostly smacks, sloops and ketches) active in the transportation of coal in and around Carmarthen Bay, and the rest of the west Wales coast, during the 19th and early 20th century. The hulk was sold, some time around the turn of the century, to a local man who salvaged what was left of the cargo and removed some of the ship's structure. Just how much of the structure was removed, and how much survives, is not known at present.

PRN 30086 (Figs 2 and 3; plate 1)

NGR: SN 3800 0190

Wreck dimensions; Length 20m; width 7m; height (max) 1.8m

Surviving elements: ***Starboard side***: Thirty eight frames (34 in pairs); beam shelf; hull planking; one metal hanging knee.
Port side: Twenty eight frames (12 in pairs); one deck support beam; hull planking.

Other elements: Stern post construction.

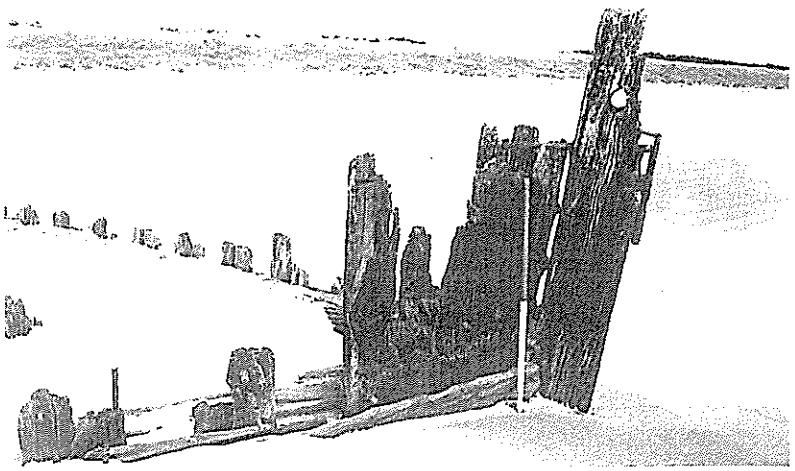
Fixings: Only iron fixings visible.

Discussion

Another northeast-southwest aligned hulk. Using the same estimating procedure as for PRN 31412, and assuming that the midships station is somewhere around FR P 7 or FR P 8a the original length of the vessel was in the order of 28m (*c.* 98 feet) with a beam of 7.5m (just over 21 feet). As these are estimated dimensions and the sizes are near enough to those of PRN 31412 it is reasonable to suggest that they were a similar size and type of vessel.

The frames were oak (*Quercus*) and set in pairs. The centres between the pairs varied between 480mm and 560mm. There was more variation in scantlings than those of PRN 31412, varying between 60mm to 110mm moulded and between 90mm and 130mm sided. How much this variation was the result of erosion is unclear without uncovering more of the vessel to check the sizes of the frames lower down in the structure. A beam shelf comprising two scarfed-jointed beams on the starboard side was secured by iron fixings to the interior of the frames. It measures between 180mm and 200mm thick on its upper surface (the only bit exposed). Hull planking was present on both sides of the vessel; the planking was fixed with square-sectioned nails driven from outboard. On some of the frames larger iron fixings pass through the planking, frames and beam shelf as at FR S 18a; FR S 20a; FR S 21a. At the visible height only the 'a' frames were fixed to the deck support beams; this was the same for both the port and starboard sides. The frame pairs were connected by iron fixings. A metal hanging knee survives on the starboard side between FR S 14b and FR S 15.

Plate 1: stern arrangement (PRN 30086). Photo DAT



The six timbers of the stern, the planking and stern post, were the most well defined part of the visible structure, a metal plate survives on the stern post. (Fig 3; plate 1).

PRN 30088 (Fig 4; plate 2)

NGR: SN 3865 0088

Wreck dimensions: Length 51.6m; width 12.6m; height (max) 2.5m

Surviving elements: ***Starboard side***: One hundred and nineteen frames (114 in pairs); hull planking; ceiling planking.
Port side: 75 frames (48 paired); ceiling planking.

Other elements: Stem post?; stanchion.

Fixings: Iron fixings; trenails; square-sectioned copper nails.

Discussion

By far the most massive of the three wrecks surveyed. A carvel-built ocean-going vessel. As with PRNs 31412 and 30086 it was aligned northeast-southwest. Parts of the vessel survive to a height of 2.5m; it is estimated that there was up to 0.75m-1m of sand covering the keelson at any one time. Because the surviving section was so low in the ship it is difficult to estimate its original beam. The wreck length (at the time of recording) was *c.*50m (164 feet). A large section of the port side structure had been removed and lay alongside.

The frames are oak (*Quercus*) and paired. The distance between pair centres ranges from 650mm to 850mm; the average was between 680mm and 710mm; scantlings varied between 200mm and 300mm square. Of the *in situ* sections planking was only visible on the starboard side; hull and ceiling planking survives. Only ceiling planking was visible on the detached section of the port side. The planking is soft wood, possibly pine (*Pinus*). The planking was fixed to the frames by iron fixings and trenails. Where iron fixings protrude through the inner planking they were covered in pitch. Several of the starboard side ceiling planks had scarf joints. The lack of planking on the *in situ* portion of the port side may have been because the side was deliberately removed to facilitate recovery of the cargo. It was common practice to remove a section of the side of a vessel to quickly recover cargo between tides (John Buglass *pers. comm.*). To do that it would have been necessary to remove all the planking and saw through the frames. That this may have taken place is also indicated by some of the *in situ* port side frames that have clearly been sawn across leaving impressions of iron fixings visible in the top (plate 2). Only the 'b' frames had been sawn; the 'a' frames were butt jointed just below this point, providing a natural weak point.

Bricks visible between the inner and outer planking on the starboard side may have been permanent ballast and a spread of stone between FR P 20 and FR P 23a may also have been taken on as ballast. They were uncovered and re-covered quickly so it was not possible to see the full extent of the spread or to remove any for analysis, but with the sediment moving continually it should be possble to retrieve some at a later date.

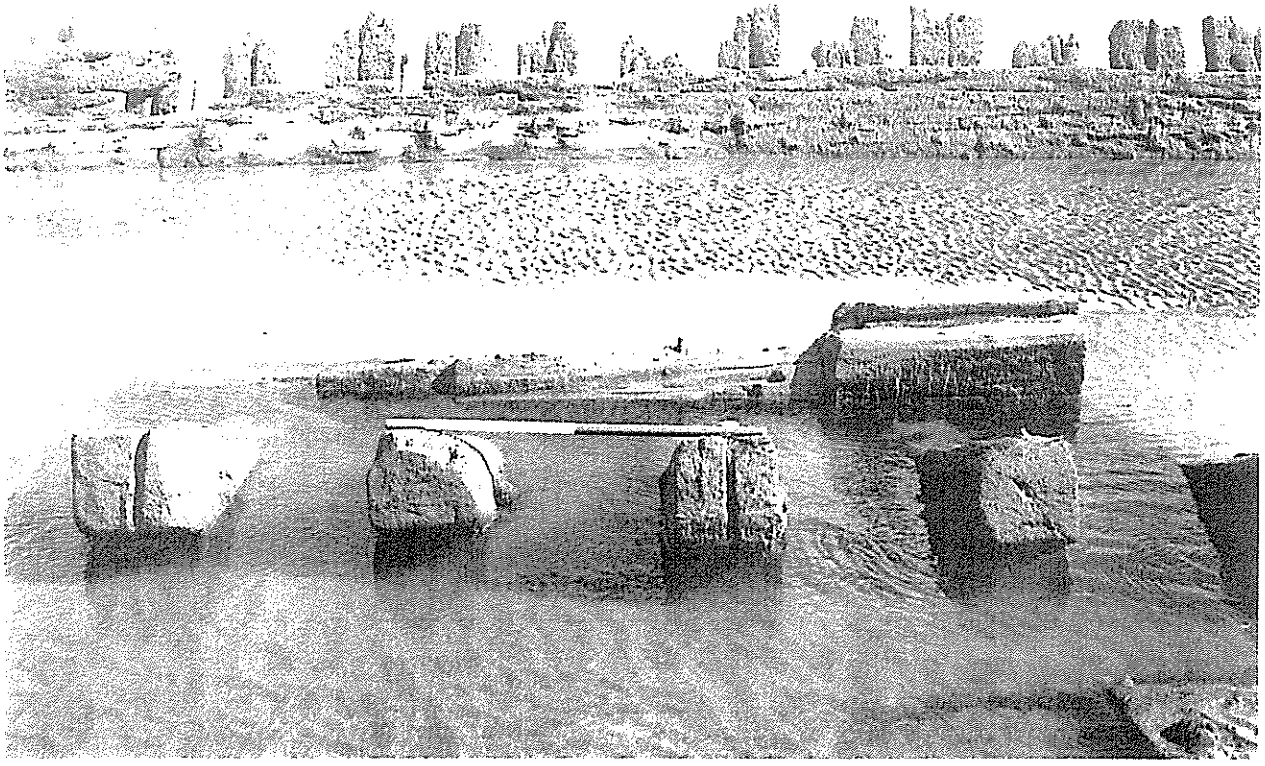


Plate 2 In-situ port side frames showing the sawn-through fixing holes. Photo DAT.

The identity of the vessel is unknown at present; it has been suggested that it was the *Vittoria*, a Genoese Bark, wrecked in 1872 (Joseph McCarthy *pers. comm.*). But this is unlikely because the *Vittoria* was making passage in ballast, and the wreck had seemingly had its side removed to facilitate removal of the cargo.

Samples were taken from three of the *in situ* port side frames for dendrochronological analysis in the hope of providing a date and place of origin. Unfortunately none of the samples were datable or from recognisable chronologies so the identity of the vessel remains a mystery, although, documentary research into the identity and histories of all the wrecks will continue.

CONCLUSIONS

Access to the sea was vital to the development of places like Kidwelly, Llanelli and Pembrey because without their sea links they would not have developed and may even have declined. The earliest reference to shipping in the Carmarthen Bay area is an early 13th century grant of a licence to one Robert of Kidwelly, shipmaster, to trade with Gascony[ii]. It is probable that the first Roman incursion into the region was by sea, and the sea would have been vital for continued communication with, and for supplying the Roman forts established at Carmarthen and Loughor. Likewise it is probable that the first Norman foray would also have been by sea and following the Norman settlement Kidwelly and Carmarthen developed into important shipping centres. During the late 18th and 19th centuries many docks, harbours, quays and landing places were constructed in the region to keep up with the ever increasing export demands of the coal industry. The remains of vessels like the *Old Dan* (PRN 31412) and PRN 30086 on Cefn Sidan Sands and four canal barges now built into a harbour wall at Burry Port are significant monuments to the coal

industry, which was after all the biggest single factor in the social and economic development of the area.

Wrecks in Carmarthen Bay

With the volume of traffic that has passed through Carmarthen Bay it is no surprise that there have been hundreds, if not thousands, of wrecks in the bay and its estuaries. In the 15th century a local landholder was granted the rights to wreck found on the shore[iii] at Kidwelly. The rights of wreck was an important local issue and one that formed part of a long-running late-18th century dispute between the manors of Pembrey and Kidwelly concerning the boundaries of their properties. As well as those with official rights of wreck the area is perhaps most famous for its unnofficial wreckers, the so-called 'Gwr y bwyelli bach' (the men of the little axes) who were reputed to have lured hundreds of vessels to their doom in the shallow waters of the bay by lighting fires on the hills during storms to fool the tired crews into thinking they were harbour lights. It is difficult to tell how many crews were actually tricked into sailing into the bay by the lights, but what is certain is that once a vessel was stranded on the sands it was quickly looted. PRN 30088 was certainly a casualty of bad weather in the bay, and it is possible that it had its side removed to unload the cargo before it could be looted. Only rarely were ships refloated once they had stuck on the sands.

The Cefn Sidan wrecks, along with the other surviving maritime features are under severe pressure from a variety of sources such as coastal erosion and modern development. Projects like this one designed to record in detail the surviving features are so important, not only for the Carmarthen bay area but for the entire Welsh coastline.

ACKNOWLEDGEMENTS

The Trust gratefully acknowledges not only the institutional support of Cadw through their grant-aid, but also the support of Rick Turner, Inspector of Ancient Monuments, for his encouragement at the project outset. A pleasing feature of the project has been the close working relationship the Trust established with the Nautical Archaeology Society (NAS) Training. Nigel Nayling kindly shared his knowledge and experience during discussions on wreck and wood recording. Thanks also go to Colin Bowness, Neil Perry and the staff of Pembrey Country Park for allowing access to the beach, and for their interest throughout the project. On a personal note the author would like to thank Hubert Wilson and Ian Darke for recording the sites in such detail, Belinda Allen for photographing the sites and Gary Momber, regional training co-ordinator for the NAS who organised the day schools. Heather James provided editorial advice and much information about Carmarthen Bay. Other Trust staff were typically generous with their time and information, and were always willing to discuss and comment throughout the project.

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[i] Page N A 1996 *Kidwelly and Pembrey Marshes: Archaeological Assessment of a Wetland Landscape*. DAT. Llandeilo.

[ii] Morris W H 1990 The Port of Kidwelly. *Carmarthenshire Antiquary* **XXVI**, 13-18.

[iii] James T A 1991 Where Sea Meets Land. In H James (ed) Sir Gâr: Studies in Carmarthenshire History. Carmarthenshire Antiquary Society Monograph Series, Volume 4. Carmarthen.

Plan of PRN 30086

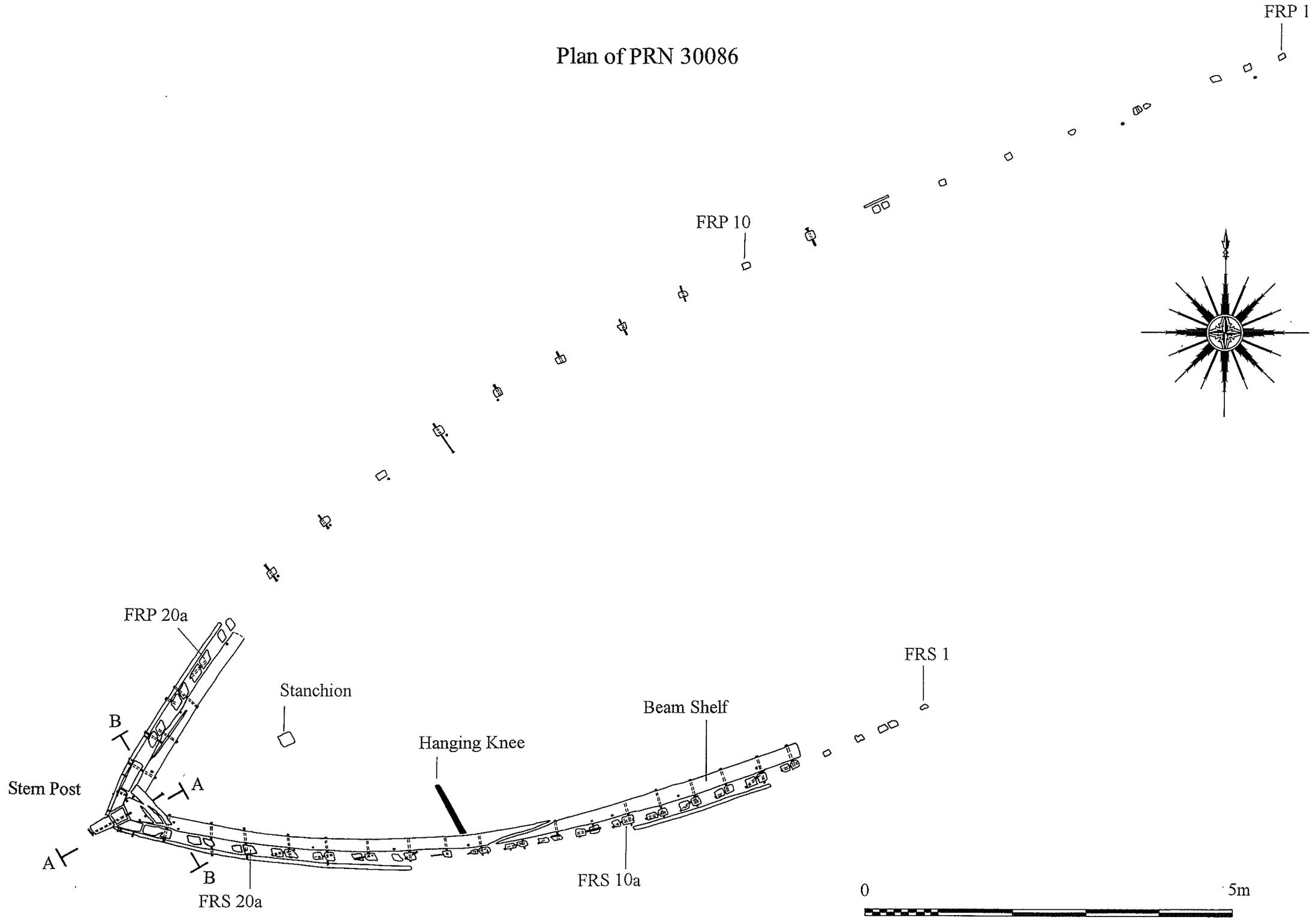
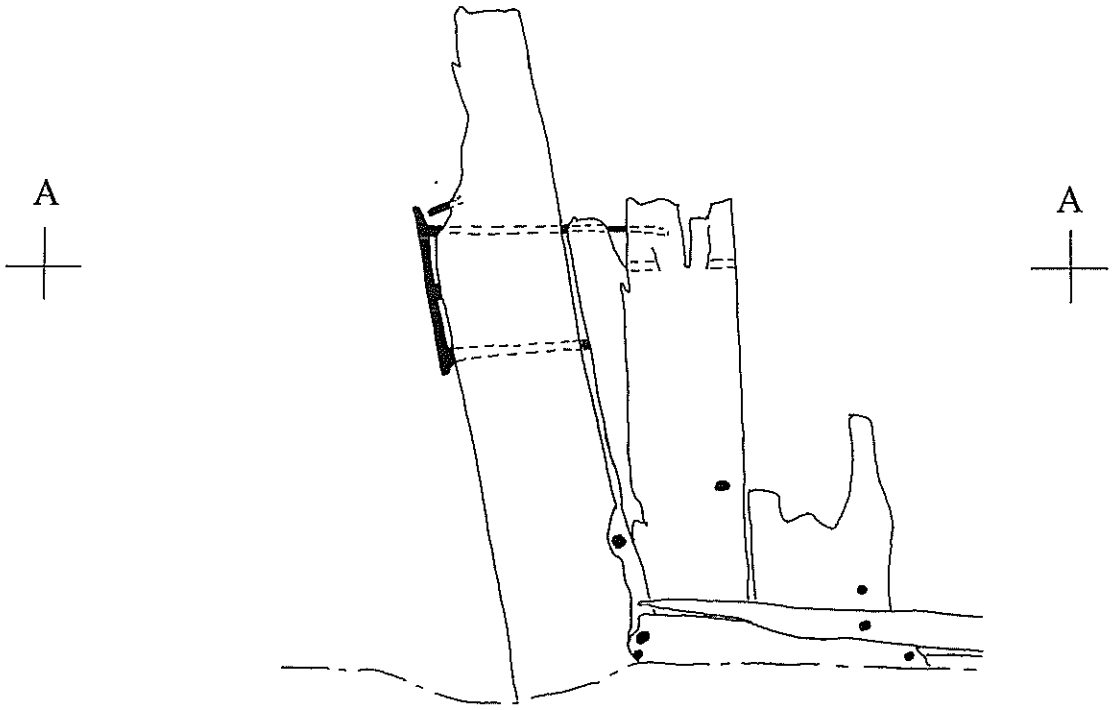
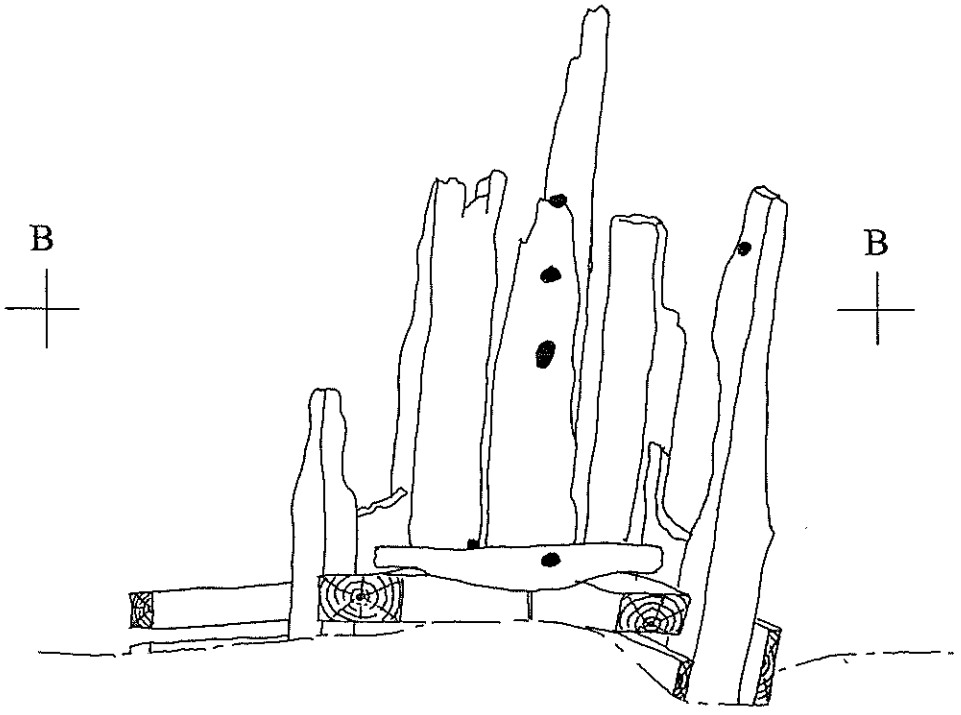


Figure 2



Stern Post Arrangment looking Northwest



Stern Post Arrangment looking Southwest

Key

Metal Fixings

Section through Planks and Frames

0 1m

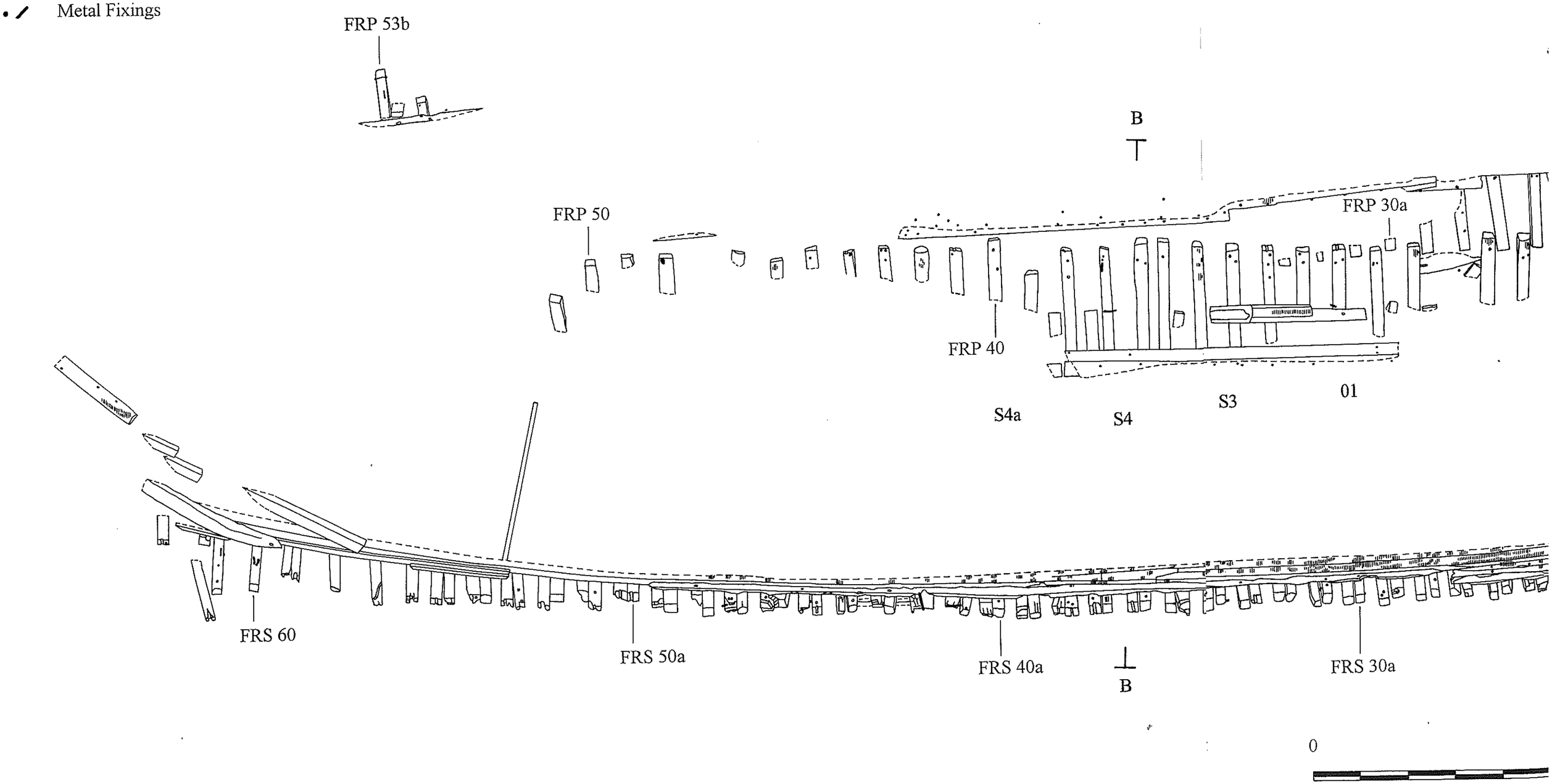
Figure 3

Plan of PRN 30088

Key

Pitch / Tar

Metal Fixings



A

18

FRP 10

FRP 1

FRP 20a

FRS 1a

FRS 10a

FRS 20a

10m

A

Figure 4